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ABSTRACT

This paper presents procedures and techniques for teaching comprehension skills to middle school students. Comprehension is described in terms of four skill areas: word meaning, structure, literal and inferential thinking, and critical reading. To help students think as they read, a strategy is proposed which involves a logical sequencing of all the skills and the use of directed assistance techniques. The strategy discussed utilizes a spiraling hierarchy in which the concept of prerequisites is employed. Directed assistance consists of analyzing the thinking task that is to be taught and actively guiding the student's attention to the crucial elements of the task through the use of modeling and highlighting techniques. (Author/WR)

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A primary responsibility of the middle school teacher is to develop knowledge and thinking ability in students. The development of this knowledge requires that specific content objectives be generated which reflect the knowledge insights and judgments to be taught, and that each objective be matched with appropriate materials such as textbooks, newspapers, documents, reference sources, journals, magazines, pamphlets, and trade books.

Once the objectives and material are selected, however, the teacher is faced with a second responsibility. He must insure that each pupil understands what is being communicated. That is, he must help students think. This is where the middle school teacher needs an understanding of reading skills.

WHAT ARE THE THINKING SKILLS?

The major thinking skills that are required to understand written material are word meaning, structure, literal/inferential thinking, and critical thinking (1). The skills in word meaning includes words called content words that name concepts, such as school, United States or freedom, and words that show relationships between concepts called relationship words such as in, and, by, or over. The structure area includes the skills that organize the meaning of the material through relationships and classifications and which reveal the structure of the author's thinking. The literal/inferential area, while drawing upon the skills of word meanings and structure, focuses on determining the author's purpose, finding the main ideas, and drawing conclusions as these are stated and implied. The last area, includes critical thinking skills and requires the

student to compare a specific author's thinking to the thinking of other authors and to pass judgment.

These four major areas of comprehension are developed in a spiraling hierarchy. This means that the skills build upon themselves and are repeated over and over with ever greater complexity and in increasingly more difficult material. A second grader uses critical thinking skills but not to the depth that an eighth grader does. As the student progresses along, however, he does more critical thinking in ever more sophisticated settings.

These thinking skills can be illustrated with the following political cartoon (2). Let's assume that the cartoon has been selected as part of the content material to be used in meeting a content objective. To meet this content objective, the student must think; he must determine the main idea of the cartoon.

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In order to find the main idea--that methods of transporting the mail are outdated--the student must first think in a literal manner that the postman is old, is riding a rocking horse, and is carrying an overflowing mail bag. He must then classify pony express as an old method of delivering mail and rocking horse as a mode of travel for youngsters. He must see the relationships between the overflowing bag, the old postman, the rocking horse, and how they all relate to the title "Pony Express." Further, he must have word meanings for pony express, U.S. Postal Service, postman, rocking horse, mail, and mailbag. From all this, the student infers that the method of transporting the overwhelming amount of mail is outdated. The inference has required skills of word meaning, classification, relationship thinking, literal thinking and inferential thinking. If the teacher were to ask the students to interpret the comments of the two figures at the bottom of the cartoon, critical thinking would also be demanded.

ANALYZING PRINTED MATERIAL

The first step in effective instruction is to state content objectives which specify the learning which is to occur. Next, the thinking skills needed to achieve the objectives must be identified. Finally, the student's current thinking skills must be assessed. If he can do the necessary thinking, he reads to achieve the content objectives. If he does not, he must learn the required thinking skill first.

Analyzing material to determine the required thinking is a crucial part of this process. To illustrate, let's assume that a teacher has chosen a content objective about the humanistic aspects of the judiciary system and plans to use the newspaper article (3) seen in Figure 2 as a

means to achieve the objective. To understand the article, the student must do main idea thinking so that he can categorize paragraphs as being either the main one or supporting ones and know the relationships between them.

BOMBER WINS VACATION

GRAND RAPIDS (AP) - A Grand Rapids man will be permitted to take his family on a vacation to Disney World in Orlando, Fla., before he is sent to prison on a bomb charge.

James G. Flynn, 39, pleaded guilty to possessing a bomb with intent to use it and was sentenced to a prison term of two to five years. He admitted planting a pipe bomb at a strike-bound plating company in Grand Rapids last fall. Police removed the bomb intact.

Flynn told Circuit Court Judge George V. Boucher his family had been planning a two-week Disney World vacation for a long time and wanted to take it before he was sentenced.

Boucher agreed and released Flynn on bond so he can take the vacation.

Figure 2

The first paragraph (man and family go on vacation before man goes to prison) is the main one because the other paragraphs explain and support it. The second paragraph (man pleading guilty, being sentenced, and why he was going to prison) supports the first one. The third paragraph (wanting to go on a family vacation before prison sentence) also supports the first one by explaining why the vacation was important. The fourth paragraph about the judge's action on the case again supports the first paragraph by explaining the court's procedure.

The ability to use main idea and supporting details in this manner depends on the prerequisite skills of classifying the content words in the sentences and seeing the relationships among those meanings. For example, the final sentence has three classifications of content meanings:

"Boucher agreed," "released Flynn", and "take vacation." The relationships between these classifications are indicated by "and" and "so." The ability to use the prerequisite skills of classifying and of observing relationships in the last sentence depends, in turn, on understanding the word meanings. The words, Boucher, agreed, released, Flynn, bond, he, take, and vacation carry the content meaning while and, on, so, can, and the signal the relationships.

The analysis began with determining which thinking skills were required to meet the content objective. This was followed by a backward progression through the thinking skills hierarchy from main idea and details to classifying and relationships to content words and function words. By analyzing in this manner, the teacher knows precisely what thinking skills are needed to achieve an objective.

TEACHING THE THINKING SKILLS

The students not possessing the thinking skills required to achieve a particular content objective must be taught these skills before they can read the material with understanding. There are three steps which the teacher can use in teaching the thinking skills. These are called "directing the learner's attention," and "directed assistance," and "application."

Directing the Learner's Attention

All the teaching devices and techniques in the world are of no avail if the students are not paying attention. Stott (4) has found that the inability to read with understanding is due, for the most part, to inattentive mental behavior. To help the student become receptive to new information, the teacher can direct the student's attention. Two factors

play a part in this technique. A student may not try because he has been taught that failure is bad or because overdoses of failure have taught him not to try. A student may also not succeed because he doesn't know what the teacher is trying to teach or because he doesn't know the important elements of the new skill and consequently pays attention to the wrong things.

When a student doesn't try because of fear of failure or fear of the unknown, the teacher has to create a climate where he can try regardless of that fear. This can be accomplished through use of the "psychological attender" (5). Here, the teacher's main purpose is to assure the learner that he is in a situation where failure is acceptable and learning is apt to be difficult. The student must know that the teacher is there to help or to teach. If the student feels that all failure is bad, the teacher should help him realize that some failure is natural. For example, very few people ride a bicycle the first time; it usually takes many attempts. If the student has been subjected to overwhelming doses of failure, the teacher must carefully build the student's confidence in himself and the teacher by reassurance that he is in a climate where trying will lead to success.

The next step in directing the learner's attention is the "physical attender" (6) which tells the student what he is going to learn and what he must do to learn it. This sets a purpose for the student and specifies what must be done to reach mastery of the learning. For example, if the skill to be learned is deciding sequence by use of key words, the student is told that. Then he is told what he has to do; he must look carefully

at the words, think about what they are saying, and especially note words, think about what they are saying, and especially note words such as first, after, and finally because these words signal the order.

Directed Assistance

In directing attention, the teacher told the students that they are in a situation where they will learn. Now the teacher must deliver on that promise. This can be accomplished by directed assistance which includes the techniques of modeling and highlighting. These are cuing processes in which the important elements of the skill and how they fit together are shown to the students. Modeling can be accomplished by the teacher demonstrating and the students emulating, while highlighting utilizes visual or auditory emphasis to make the pieces of the skill stand out. Both techniques are in effect, crutches.

Crutches will fail if they are never removed or if they are removed all at once. If the directed assistance is not removed, the student may learn to depend on the assistance and not learn the skill. Likewise, if the directed assistance is removed all at once, its effectiveness is lost because the student has not had time to adjust. This can be illustrated by a person who has had a knee operation and must learn to walk all over again. If the doctor prescribed crutches and instructed the patient to use them indefinitely, there would be a strong chance that the patient would come to depend upon them totally and always use them. Similarly, if the doctor left the crutches, instructed the patient to use them, and one week later suddenly removed the crutches, there would be a strong chance that the patient would not be ready to give up the crutches; the learning of the skill was not strong enough to stand alone and more help was

needed. Thankfully, the doctor does neither but instead gradually removes the use of the crutches by instructing the patient to put more and more weight on the leg until he is walking without the use of the crutches. Then, and only then, are the crutches finally removed.

The same principle applies to the directed assistance provided when teaching thinking skills (7). As the students respond correctly in the learning episode, the directed assistance is gradually dropped until the students are using the newly learned skill without any assistance of any type. At that time, the students have learned that skill. Similarly, it can be said that the teacher has taught because the students were shown how to do the skill rather than being left to their own devices.

The first of these directed assistance techniques--modeling--has been shown by Bandura (8) to be a powerful strategy. Many aspects of the culture, such as talking, are learned through modeling. It is the strongest of the directed assistance techniques since the teacher literally gives the students the answer. For instance, the teacher can model how to recognize the propaganda device of "glittering generalities" by literally verbalizing the steps. Since it is a modeling technique, the students must emulate the teacher's procedure by verbalizing those same steps immediately following the teacher's example. Because modeling is a strong directed assistance technique, it should be the first technique to be gradually eliminated.

Highlighting by visual or auditory means is also a powerful strategy. In written selections, the elements of the thinking skills are highlighted by color, underlining, frames and/or by voice emphasis. For example, if cause and effect relationships are being learned, the words that signal

the relationships are highlighted visually while if the objective is to recognize propaganda devices, words that signal bias may be visually highlighted. Likewise, if the students are to find the literal purposes of the author, the teacher can orally emphasize that part of the selection while if the objective is to find "glittering generalities," the teacher can orally emphasize these words in the selection.

Visual and auditory highlighting can be used separately or together but both techniques must gradually be eliminated. If color is used, it is diminished until a dot of color remains and it is finally eliminated altogether. When underlining is used, the underlining gradually fades while, when frames are used, sections of the frame are removed gradually until it disappears entirely.

Similarly, when voice emphasis is used, the emphasis is gradually lessened until a normal tone of voice is used. The assistance is diminished as the students respond correctly.

After the students are shown their ability in using a skill with no directed assistance, there needs to be an opportunity to practice. Practice sets the skill and makes it a habitual part of the students' repertoire of skills. This makes it possible to use the skill at any needed time with any selection written at the students' difficulty level. The students need to know the correctness of their response after every practice attempt since the goal is to habituate the correct use of the skill and not the wrong response.

Application of the Skills

The final step in effective comprehension instruction is to insure that the student can apply the thinking skill while reading to learn.

For instance, if the students have learned that before, during, and after are key words that signal sequence and if they have practiced this skill in specific situations where they immediately knew the correctness of their responses, they are now ready to apply it to any written selection where the variables that affect comprehension have been controlled. Eventually, continual application of this specific thinking skill leads to a thinking generalization where anytime the students read before, during or after, they think automatically that these words signal sequence.

SUMMARY

The middle school teacher is charged with the task of assisting students as they learn, primarily through printed materials. In order to learn while reading printed material, students must possess thinking skills. Using the content objectives as a guideline, the middle school teacher decides which thinking skills are necessary, assesses the students for the thinking skills, teaches the thinking skills to those who need them, and finally, provides for an application of the thinking skills in the material being used.

While middle school teachers may not want to accept the responsibility for basic reading instruction, they can hardly dodge the responsibility for developing thinking skills within the framework of general education. Such an emphasis is particularly relevant to the middle school, where the emphasis is on process. And what is the process of middle school education if it is not thinking?

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